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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,475	12/28/2004	Keisuke Kawamura	263788US2PCT	2692

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
GRAMAGLIA, MAUREEN	
ART UNIT	PAPER NUMBER
1792	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/519,475	KAWAMURA ET AL.	
	Examiner	Art Unit	
	Maureen Gramaglia	1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,7-11 and 14* is/are pending in the application.

4a) Of the above claim(s) *8 and 9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7,10,11 and 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1, 2, 7, 10, 11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication 2001/0021422 to Yamakoshi et al. ('422 to Yamakoshi et al.) in view of European Patent Application Publication EP 0955665A2 (from Applicant's IDS) to Murata et al., U.S. Patent 6,417,079 to Yamakoshi et al. ('079 to Yamakoshi et al.), and U.S. Patent Application Publication 2002/0134508 to Himori et al.**

In regards to Claims 1, 2, 7, 10, 11, and 14, '422 to Yamakoshi et al. teaches a method of plasma CVD in a plasma CVD apparatus (Figure 21, for example) with which high-frequency electric power generated by a plurality of high-frequency electric power feeding circuits 5a, 5b is fed to a plurality of discharge electrodes (rungs of ladder electrode 303), and plasma is generated between the discharge electrodes and a substrate G which are in a film formation chamber 2 into which a gas for forming a film containing a substance has been introduced through gas discharge ports 17, so as to vapor deposit the substance on the substrate (Figure 8 for example illustrates the common features of the plasma processing apparatus; Paragraphs 137-140), the apparatus comprising voltage distribution regulators 26a, 26b configured to adjust

deviation in distribution of voltage on the discharge electrodes (particularly based on the positioning of the feeding points), the distribution of voltage occurring in a direction at right angles to a direction of fed electric power through the discharge electrode (Figures 8 and 21; at least Paragraphs 137-170 and 207-215), wherein the distribution of the voltage at an end part of the substrate and a central part of the substrate are balanced so that plasma is made uniform over the entirety of the substrate (at least Paragraphs 137-149 and 207-215), and a phase-shifting device 33 varying over time a phase difference between streams of the high-frequency electric power, which have the same frequency, supplied from the plurality of the high-frequency electric power feeding circuits 5a, 5b. (at least Figure 21 and Paragraphs 207-215)The teachings of '422 to Yamakoshi et al. were discussed above.

In regards to Claims 1, 2, 7, 10, 11, and 14, Yamakoshi et al. does not expressly teach that the voltage distribution regulators are impedance changers that change an impedance at a feeding point for the discharge electrodes toward the high frequency electric power feeding circuit.

Murata et al. teaches a plasma CVD apparatus (Figure 1) with which high-frequency electric power generated by a high-frequency electric power feeding circuit 36 is fed to a plurality of discharge electrodes (rungs of ladder electrode 32; Figure 2), and plasma is generated between the discharge electrodes and a substrate 33 which are in a film formation chamber 31 into which a gas for forming a film containing a substance has been introduced through gas discharge ports 37a, so as to vapor deposit the substance on the substrate (Paragraph 35), the apparatus comprising a voltage

distribution regulator 61a-61h for adjusting deviation in distribution of voltage on the discharge electrodes, the distribution of voltage occurring in a direction at right angles to a direction of fed electric power through the discharge electrode (Figure 2), wherein the distribution of the voltage at an end part of the substrate and a central part of the substrate are balanced so that plasma is made uniform over the entirety of the substrate (ex. Table 1), and wherein the voltage distribution regulator comprises impedance changers provided to each of the plurality of high-frequency cables for supplying the high frequency power to the plurality of discharge electrodes (Figure 1; Paragraphs 31-34).

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by Yamakoshi et al. to substitute the voltage distribution regulator taught by Murata et al. for those taught by Yamakoshi et al., for the predictable result of successfully adjusting the deviation in the distribution of voltage on the discharge electrodes.

In regards to Claims 1, 2, 7, 10, 11, and 14, the combination of '422 to Yamakoshi et al. and Murata et al. does not expressly teach that each impedance changer can be a stub comprising a branch cable which branches off from the respective high-frequency cable, or that the stub specifically comprises a passive element which is connected to a distal end of the branch cable, and with a change in a constant of the passive element, the stub changes the impedance at a feeding point for the respective discharge electrode toward the high-frequency electric power feeding circuit.

‘079 to Yamakoshi et al. teaches that an impedance changer 413 can be a stub comprising a branch cable and passive elements (variable capacitor and variable inductor; Figure 7) connected to a distal end of the branch cable, and with a change in the respective constants of the variable passive load elements, the stub changes the impedance at a feeding point for a discharge electrode 303. (Figure 7; Column 11, Lines 13-27)

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by the combination of ‘422 to Yamakoshi et al. and Murata et al. to substitute the impedance changer taught by '079 to Yamakoshi for that taught by the combination of ‘422 to Yamakoshi et al. and Murata et al., to have each impedance changer be a stub comprising a branch cable, as taught by ‘079 to Yamakoshi et al., and specifically to have passive elements connected to a distal end of the branch cable, wherein with a change in the respective constants of the variable passive load elements, the stub changes the impedance at a feeding point for a discharge electrode, as taught by ‘079 to Yamakoshi et al., for the predictable result of successfully changing the impedance at each feeding point.

In regards to Claims 1, 2, 7, 10, 11, and 14, the combination of ‘422 to Yamakoshi et al., Murata et al., and ‘079 to Yamakoshi et al. does not expressly teach that a change in the cable length of the branch cable, or in the characteristic impedance of the branch cable, changes the impedance at a feeding point for the discharge electrode.

Himori et al. teaches that a change in the cable length of a branch cable 132 of a stub, by moving short-circuiting element 133, changes the characteristic impedance of the branch cable, and thereby changes the impedance at a feeding point for a discharge electrode 122. (Figure 17; Paragraph 10)

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by the combination of '422 to Yamakoshi et al., Murata et al., and '079 to Yamakoshi et al. to instead have each stub comprise a branch cable with a moveable short-circuiting element, as taught by Himori et al., that changes the length and characteristic impedance of the branch cable, and thereby changes the impedance at a feeding point for a discharge electrode, as taught by Himori et al., for the predictable result of successfully changing the impedance at each feeding point.

Response to Arguments

3. Applicant's arguments filed 11 November 2008 have been fully considered but they are not persuasive.

4. At the outset, Examiner notes that Applicant has not argued that Himori doesn't suggest adjusting the characteristic impedance of the branch cable itself, and therefore has not presented any separate arguments against the grounds of rejection for Claims 7 and 14 (which do not recite the feature of changing the length of the branch cable).

5. Specifically, in regards to Applicant's argument that Himori is completely silent regarding changing a length of the branch cable to adjust the impedance at a feeding point for the discharge electrode, Examiner must disagree. The length of the branch cable of the stub of Himori is considered to be a length between a branch point and the

moveable short-circuiting element 133, since only the stretch of cable between the branch point and the moveable short-circuiting element 133 will act as the branch cable. (See at least Figure 17 of Himori.) By teaching that the short-circuit element 133 is moveable, Himori teaches that the length of the branch cable can be changed. Himori further teaches that the movement of the short-circuit element 133 changes the characteristic impedance of the branch cable (by changing its effective length), and thereby changes the impedance at a feeding point for a discharge electrode. (Figure 17; Paragraph 10)

Conclusion

6. Applicant's amendment necessitated any new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen Gramaglia whose telephone number is (571)272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Maureen Gramaglia/
Examiner, Art Unit 1792

/Parviz Hassanzadeh/
Supervisory Patent Examiner, Art Unit 1792